इंटरनेट मानक

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"जानने का अधिकार, जीने का अधिकार"
Mazdoor Kisan Shakti Sangathan
"The Right to Information, The Right to Live"

"पुराने को छोड नये के तरफ"
Jawaharlal Nehru
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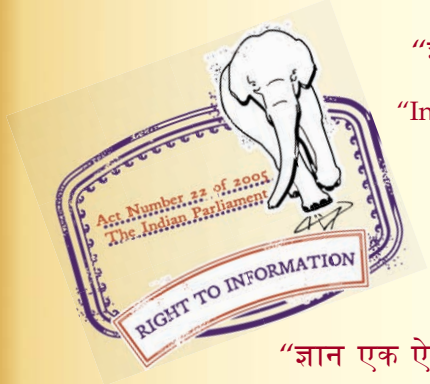
IS 510 (1986): Blacksmith's Anvils [PGD 6: Earth, Metal And Wood Working Hand Tools]



"ज्ञान से एक नये भारत का निर्माण"
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"ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है"
Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

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UDC 621·733·074 : 682·4

(Reaffirmed 2002)

Indian Standard

SPECIFICATION FOR BLACKSMITH'S ANVILS

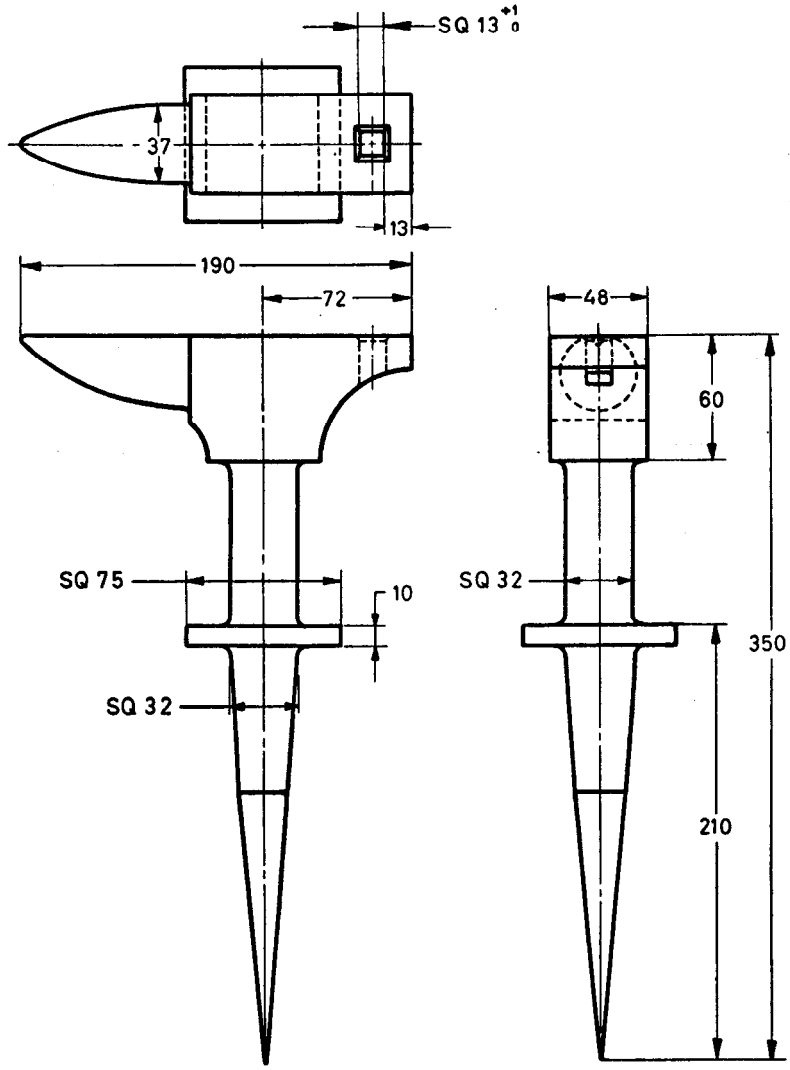
(Third Revision)

Hand Tools Sectional Committee, EDC 12; Metal Workers, Tools Subcommittee, EDC 12 : 2 [Ref : Doc : EDC 12 (4653)]

1. Scope — Covers the dimensions and other requirements for blacksmith's anvils with and without spikes of different sizes weighing from 4 to 200 kg.

2. Dimensions

2.1 Dimensions of 4 kg anvil with spike shall be as given in Fig. 1.



Note — Tolerance on Nominal Mass ±5 percent.

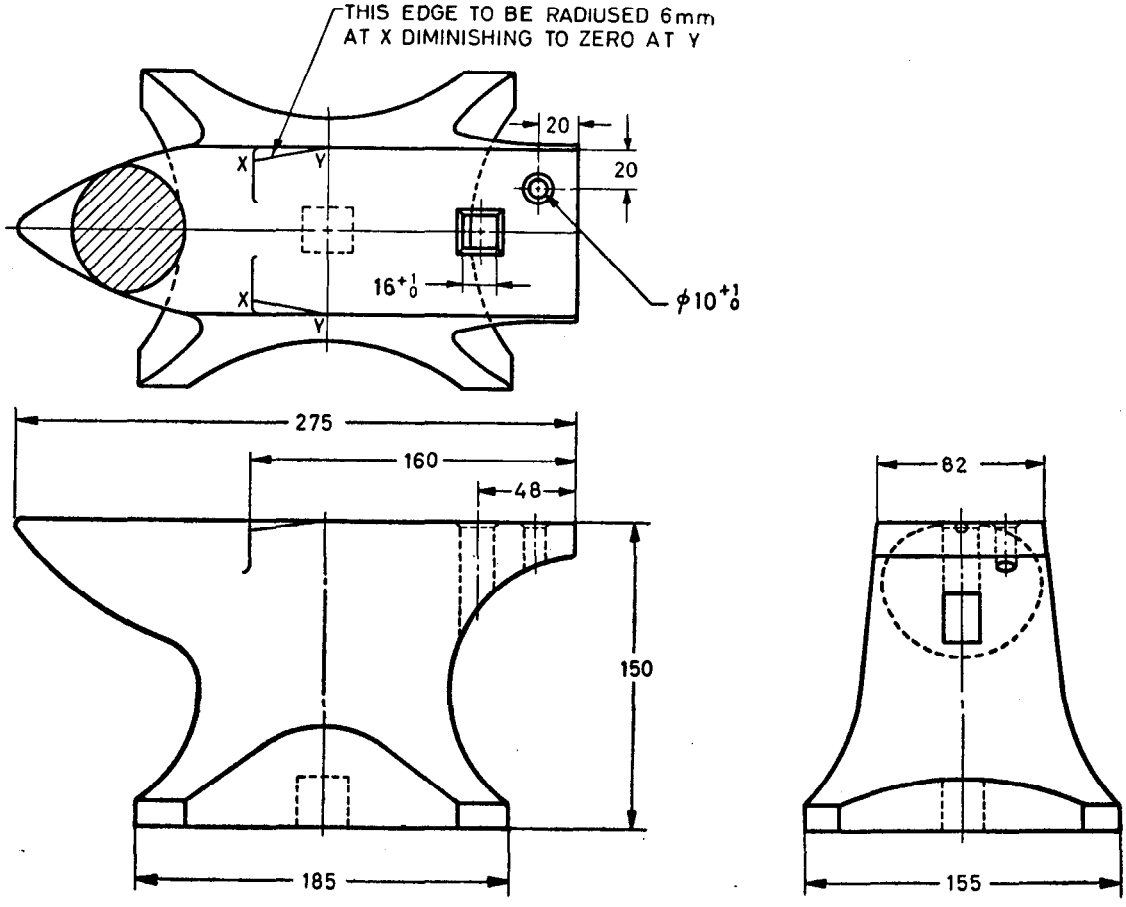
All dimensions in millimetres.

FIG. 1 4-kg ANVIL WITH SPIKE

2.2 Dimensions of short beak 20 kg anvil without spike shall be as given in Fig. 2.

2.3 Dimensions of the anvils without spikes, weighing from 12 to 175 kg, shall be as given in Table 1.

Adopted 7 October 1986 | | Gr 3



Note — Tolerance on Nominal Mass ±5 percent.

All dimensions in millimetres.

FIG. 2 20-kg SHORT BEAK ANVIL WITHOUT SPIKE

2.4 The tolerances on all dimensions of anvils shall be ± 5 percent except for the dimensions of cutter and punching holes, for which the tolerances are indicated in Fig. 1, 2 and Table 1.

3. Material — Anvils shall be made of either alloy cast iron (i.e. Cast iron mixed with suitable percentage of chromium and molybdenum) or steel conforming to Grade 1 or Grade 2 of IS : 2707-1982 'Specification for carbon steel castings for surface hardening (*second revision*), meeting the requirements laid down in **4** and **9**.

4. Hardness — The hardness shall be measured at six points about 25 mm apart on the face of the anvil and shall be not less than as given below:

For Cast Steel	370 *HV*
For Alloy Cast Iron	285 *HV*

5. Designation — The anvils shall be designated by its commonly used name, the nominal mass and the number of this specification.

Example:

A Cast steel anvil having a nominal mass of 12 kg shall be designated as:

Cast steel anvil 12 kg IS : 510

6. Manufacture

6.1 The anvil castings shall be properly cleaned and in case of cast steel anvils, these shall be annealed to relieve the stresses and refine the grain size.

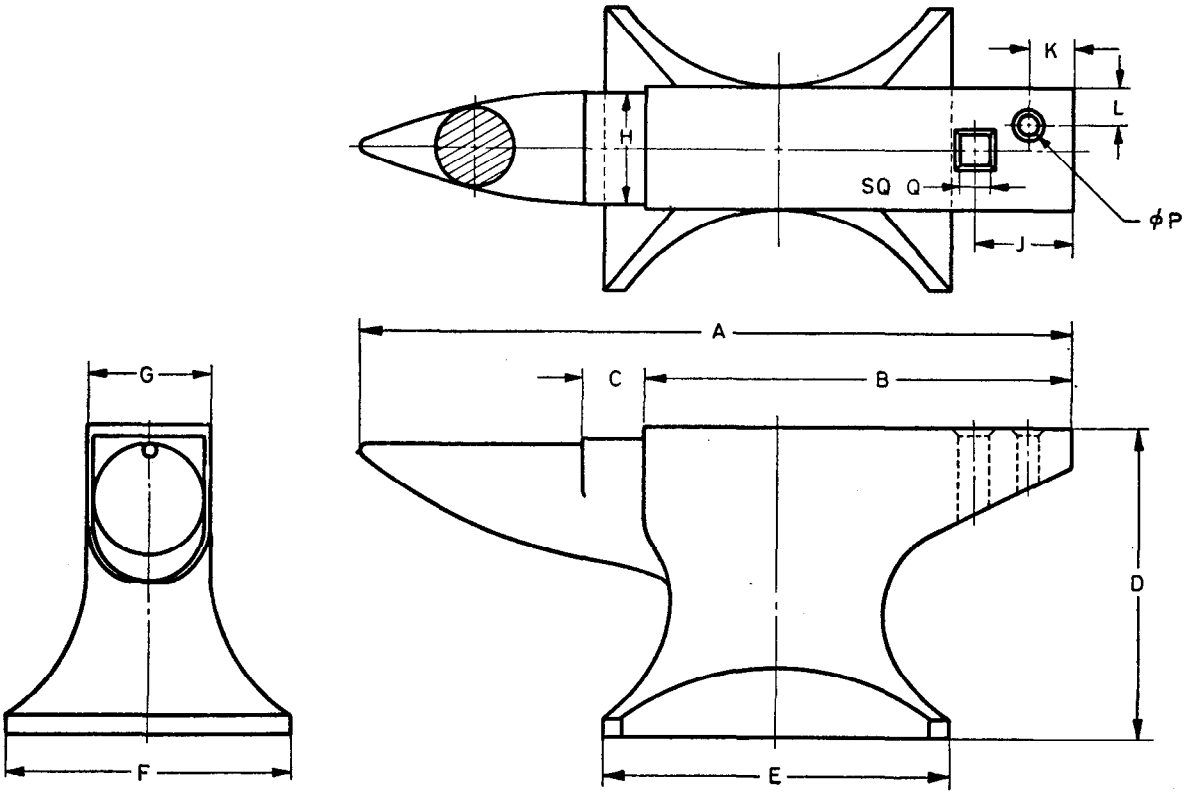
6.2 The face of the anvil shall be machined or ground and hardened. The variations on the surface shall not exceed one millimetre when measured over any length of 400 mm.

6.3 The beak shall be smoothly finished.

TABLE 1 DIMENSIONS OF BLACKSMITH'S ANVILS WITHOUT SPIKE

(*Clauses* 2.3 *and* 2.4)

All dimensions in millimetres.



Nominal Mass kg ± 5%	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*J*	*K*	*L*	*P* +1 0	*Q* +1 0
12	290	190	20	160	150	130	65	60	36	10	13	10	16
25	450	290	40	190	190	165	85	70	52	25	20	10	16
50	510	320	50	230	250	200	120	80	68	30	32	13	22
63	560	350	50	250	280	230	120	80	76	38	32	13	22
75	610	370	60	280	305	230	120	90	76	38	32	13	22
100	700	420	60	305	340	280	120	110	96	44	38	19	32
125	750	480	75	305	340	280	140	110	110	52	44	19	32
150	800	480	75	350	340	320	140	130	120	52	44	19	32
175	800	540	75	350	380	340	150	130	140	63	52	19	32

6.4 The cutter and punching holes shall be reasonably square to the face and their edges shall be well chamfered.

6.5 The anvils shall be designed to be stable and the base shall be flat and parallel with the face.

7. Workmanship and Finish — The anvils shall be free from cracks, pits, rust, blow holes, scales and other imperfections. The unmachined portions shall be dressed smooth.

8. Sampling — Unless otherwise agreed upon between the purchaser and the manufacturer, the sampling plan given in **8.1** shall be followed.

8.1 For inspection of various requirements given in the standard, sampling plan with inspection level IV and Acceptable Quality Level (AQL) 1 percent given in Tables 1 and 2 of IS : 2500 (Part 1)-1973 'Sampling inspection tables: Part 1 Inspection by attributes and by count of defects (*first revision*)', shall be followed.

TABLE 2 MASS OF HAMMERS FOR TESTING ANVILS

(*Clause* 9.2)

Nominal Mass of Anvil kg	Mass of Hammers* kg
4	0·5
12	2·0
20	
25	
50	3·0
63	
75	
100	5·0
125	
150	
175	

**See* IS : 841-1983 'Specification for steel hammers (*second revision*)'.

9. Tests

9.1 *Soundness Test* — The soundness of each anvil shall be tested by supporting the anvil on a wooden block and giving light blows with the flat end of a 1 kg hammer on its face (*See* IS : 841 1983). Each tap of the hammer shall give out a sharp, clear, metallic ring. Anvils having hollow or dull sounding places on the face shall be rejected.

9.2 *Practical Test* — The beak and the face of each anvil shall be subjected to a minimum of ten number of hard blows from a hammer on a mild steel flat bar of 10 mm thickness interposed between the anvil and the hammer. The blows shall be given on the bar, keeping it at the same spot on the anvil during the test. The mass of the hammer to be used for testing different sizes of anvils shall be as given in Table 2. After the test, the surface of the anvil shall not show any damage or indentation.

10. Marking — Each anvil shall be legibly and indelibly marked with manufacturer's name, initials or trade-mark, its nominal mass and the year of manufacture.

10.1 *Certification Marking* — Details available with the Bureau of Indian Standards.

11. *Presentative Treatment and Packing*

11.1 The working surface of the anvil shall be covered with a non-cellulose varnish and the rest of the body with bitminous paint.

11.2 The anvils may be packed in wooden boxes for safe handling or as agreed to between the purchaser and the manufacturer.

EXPLANATORY NOTE

This standard was first published in 1953 and its first revision was taken up in 1964. In the second revision taken up in 1980 reference of IS : 2707-1973 'Specification for carbon steel castings for surface hardening (*first revision*)' was made. The mass of hammers for testing different sizes of anvils was also amended.

In this revision the alloy cast iron as an alternate material for anvils has also been included. Accordingly the title of the specification has been changed from "Blacksmith's Anvils (cast steel)" to "Blacksmith's Anvils". The hardness for alloy cast iron anvils is included and number of blows in practical test have been specified. The mass of hammers, for testing of anvils have also been modified. These changes have been done based on the prevalent practices being followed in the country.

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